Small Business Innovation Research/Small Business Tech Transfer

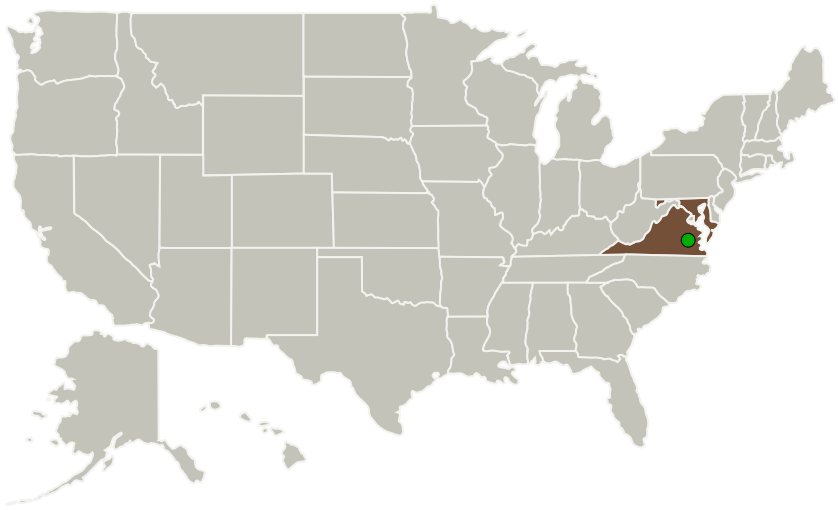
Novel Radiation Shielding Composite Structural Materials for Deep Space Human Protection, Phase I

Completed Technology Project (2017 - 2017)

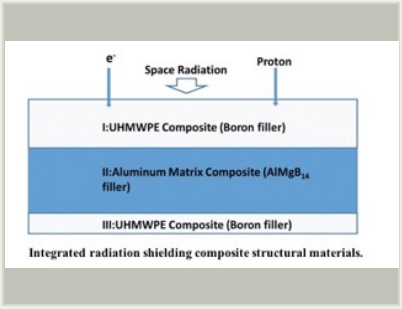
Project Introduction

Advances in radiation shielding systems technologies are needed to protect humans and electronic components from all threats of space radiation. This is especially important as NASA continues to develop plans for long duration missions, where exposure to harmful radiation is greater than ever before. Brimrose Technology Corporation, in collaboration with Penn State University, proposes to develop a novel integrated radiation shielding material based on aluminum and UHMWPE and Field Assisted Sintering Technology (FAST) will be used to fabricate the prototypes of these materials. Beside radiation shielding capabilities, such materials would also have desirable thermal and mechanical properties suitable for forming protective structures that are strong, durable, thermally manageable, and hermetic.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Brimrose Technology Corporation(BTC)	Lead Organization	Industry	Sparks, Maryland
Langley Research Center(LaRC)	Supporting Organization	NASA Center	Hampton, Virginia



Novel Radiation Shielding Composite Structural Materials for Deep Space Human Protection, Phase I Briefing Chart Image

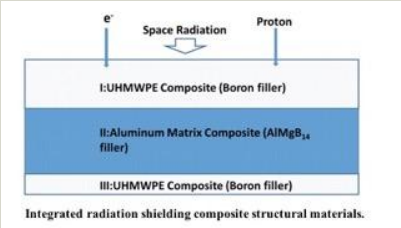
Table of Contents

Novel Radiation Shielding Composite Structural Materials for Deep Space Human Protection, Phase I

Completed Technology Project (2017 - 2017)

Primary U.S. Work Locations	
Maryland	Virginia

Images



Briefing Chart Image
Novel Radiation Shielding Composite Structural Materials for Deep Space Human Protection, Phase I Briefing Chart Image *(https://techport.nasa.gov/image/130378)*

Organizational Responsibility

Responsible Mission Directorate:
Space Technology Mission Directorate (STMD)

Lead Organization:
Brimrose Technology Corporation (BTC)

Responsible Program:
Small Business Innovation Research/Small Business Tech Transfer

Project Management

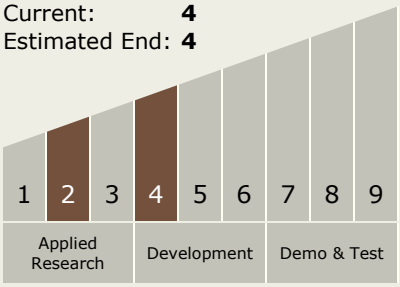
Program Director:
Jason L Kessler

Program Manager:
Carlos Torrez

Principal Investigator:
Sudhir B Trivedi

Technology Maturity (TRL)

Start: **2**
Current: **4**
Estimated End: **4**



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Completed Technology Project (2017 - 2017)

Technology Areas

Primary:

- TX06 Human Health, Life Support, and Habitation Systems
  - TX06.5 Radiation
    - TX06.5.3 Protection Systems

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System